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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/826,712	04/05/2001	Johann Engelhardt	21295/100	3955

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HOUSTON ELISEEVA
4 MILITIA DRIVE, SUITE 4
LEXINGTON, MA 02421

EXAMINER

NGUYEN, THONG Q

ART UNIT PAPER NUMBER

2872

DATE MAILED: 07/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/826,712

Applicant(s)

ENGELHARDT ET AL.

Examiner

Thong Q. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 May 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 8-10 and 16-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8-10 and 16-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 27, 2003 has been entered.

Response to Amendment

2. The present Office action is made in response to the amendment (Paper No. 19) filed on 5/29/2003.

Specification

3. The substitute specification filed on 5/29/2003 has been received and entered into the present application.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-4, 8-10 and 16-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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a) Claim 1 is rejected under 35 USC 112, second paragraph for the following reasons: First, the feature thereof "two corrected microscope objectives... a specimen" (lines 9-10) is indefinite. Applicant should note that the antecedent basis provided on line 6 does not disclose that the two objectives are the corrected objectives. Further, the mentioned feature makes the claim indefinite because it is unclear how the objectives are made as corrected objectives; second, the feature thereof "the optical axis" (line 11) lacks a proper antecedent basis. Applicant should note that the claim recites an illuminating beam path on line 3 and the illuminating beam path does not mean that it is optical axis of the system.

b) Claim 3 is indefinite because the feature "the second plane" (lines 1-2) lacks a proper antecedent basis. Applicant should note that claim 2, not claim 1, provides an antecedent basis for the second plane.

c) Claim 4 is functional. The claim recites functional language thereof "a beam splitter... one another" (lines 1-5) without reciting sufficient structure to warrant the presence of functional language. In other words, it is unclear how a beam-splitter of an interferometer for splitting an incident light beam into two individual beam paths can make the so-called "accumulated aberrations of the interferometer" opposite to one another.

The claim is also indefinite because the feature thereof "the accumulated aberrations of the of the interferometer" (lines 4-5) is indefinite. Further, the terms "of the of the" (lines 4-5) should be changed to --of the--.

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d) Each of claims 8-9 and 19 is indefinite because the feature(s) relating to the first, second and third wavelengths lacks a proper antecedent basis. Applicant should note that the basis for the mentioned feature(s) is/are canceled in its amended base claim 1.

e) The remaining claims are dependent upon the rejected base claims and thus inherit the deficiencies thereof.

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 1-3, 8-9 and 19-20, as best as understood, are rejected under 35 U.S.C. 35 U.S.C. 103(a) as obvious over Hell (EP No. 491 289) in view of Picard (U.S. Patent No. 4,965,441) (both of record).

In columns 9-11 and fig. 3, Hell discloses a double confocal scanning microscope having an illuminating system defining an illuminating beam path from the illuminating system to a specimen, and a detecting system defining a detection beam path. There are two objectives disposed equally on both sides of a specimen wherein the light passing through one objective will focus into the specimen. With regard to the features that the objectives have their longitudinal chromatic aberrations being almost identical, such a feature is considered as an obvious matter to one skilled in the art. The support for that conclusion is found in the specification of the reference in page 3, column 4. Further, the use of a set of objectives having the same structure is admitted by the applicant as an obvious

matter within the level of one ordinary skill in the art. See amendment (Paper No. 19, page 5 (last two lines) through page 6, first line. The system provided by Hell also comprises at least one beam-splitter used for splitting an incident light beam into two individual beam paths and other optical elements including polarizations elements, mirrors, lenses disposed in the illuminating light path and detecting light path. The detecting system comprises a detection pinhole which is symmetrically positioned in the detecting beam path. While Hell does not clearly state that the optical components used in his system is corrected for errors/aberrations; however, since any optical components process at least one type/kind of error/aberration correction, and the claims do not recite any specific aberrations as well as error/aberration correction; therefore, the optical components disclosed in the double scanning microscope of Hell inherently process such characteristics. The only feature missing from the art of Hell is that he does not clearly state that the illumination system provide light of different wavelengths and those different wavelengths will be focused in different planes; however, a laser is understood as a light containing different wavelengths and the different wavelengths will be focused into different planes by the same lens element. In such a knowledge then the system provided by Hell meets all the features recited in the claims. A support for that conclusion is found in the reference at page 4, column 5 in which Hell refers to the use of color beam splitter and fluorescent microscopy with requires that the illuminating light to the specimen and/or reflected light from the specimen has different wavelengths.

Further, the use of an illumination system in a scanning microscope having a laser of different wavelengths is known to one skilled in the art. The support for that conclusion is found in the scanning microscope provided by Picard in which he discloses the use of a laser of different wavelengths in a scanning microscope and the light of different wavelengths will be focused in different planes. With regard to the value of the wavelengths used in the system, such wavelengths are well known as the wavelengths to be used in the microscope for illuminating an object. As a result of use laser having different wavelengths for illuminating a specimen in the system of Hell then the light passing through the opposite objectives will focus on a particular focal length dependent upon the kind of wavelengths of the light. Thus, it would have is known to one skilled in the art at the time the invention was made to modify the system provided by Hell by utilizing the illuminating system having a laser of different wavelengths as suggested by Picard for the purpose of illuminating an object with different levels or an object of an irregular surface.

8. Claims 1-4, 8-9 and 19-20, as best as understood, are rejected under 35 U.S.C. under 35 U.S.C. 103(a) as obvious over Schoppe (DE 39 18 412) in view of Picard (U.S. Patent No. 4,965,441) (both of record).

In columns 1-3 and fig. 1, Schoppe discloses a double confocal scanning microscope having an illuminating system defining an illuminating beam path from the illuminating system to a specimen, and a detecting system defining a detection beam path. There are two objectives disposed equally on both sides of

a specimen wherein the light passing through one objective will focus into the specimen. With regard to the features that the objectives have their longitudinal chromatic aberrations being almost identical, such a feature is considered as an obvious matter to one skilled in the art. The support for that conclusion is found in the specification of the reference in columns 2-3. Further, the use of a set of objectives having the same structure is admitted by the applicant as an obvious matter within the level of one ordinary skill in the art. See amendment (Paper No. 19, page 5 (last two lines) through page 6, first line. A beam-splitter is used for splitting an incident light beam into two individual beam paths. It is also noted that there are other optical components including polarizations elements disposed in the illuminating light path and detecting light path. The detecting system comprises a detection pinhole which is symmetrically positioned in the detecting beam path. While Schoppe does not clearly state that the optical components used in his system is corrected for errors/aberrations; however, since any optical components process at least one type/kind of error/aberration correction, and the claims do not recite any specific aberrations as well as error/aberration correction; therefore, the optical components disclosed in the double scanning microscope of Schoppe inherently process such characteristics. It is also noted that since the optical path lengths from the beam-splitter to the specimen in each individual illuminating beam path are equal to each other; therefore, the aberrations are inherently made opposite to each other.

The only feature missing from the art of Schoppe is that he does not clearly state that the illumination system provide light of different wavelengths and those different wavelengths will be focused in different planes; however, a laser is understood as a light containing different wavelengths and the different wavelengths will be focused into different planes by the same lens element. In such a knowledge then the system provided by Schoppe meets all the features recited in the claims. If it is not inherent then the use of an illumination system having a laser of different wavelengths in a scanning microscope is known to one skilled in the art. The support for that conclusion is found in the scanning microscope provided by Picard in which he discloses the use of a laser of different wavelengths in a scanning microscope and the light of different wavelengths will be focused in different planes. With regard to the value of the wavelengths used in the system, such wavelengths are well known as the wavelengths to be used in the microscope for illuminating an object. As a result of use laser having different wavelengths for illuminating a specimen in the system of Hell then the light passing through the opposite objectives will focus on a particular focal length dependent upon the kind of wavelengths of the light. Thus, it would have is known to one skilled in the art at the time the invention was made to modify the system provided by Schoppe by utilizing the illuminating system having a laser of different wavelengths as suggested by Picard for the purpose of illuminating an object with different levels or an object of an irregular surface.

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9. Claims 10 and 16-18 rejected under 35 U.S.C. 103(a) as being unpatentable over Hell in view of Picard as applied to claim 1 above, and further in view of Stern et al (U.S. Patent No. 5,790,242).

The combined product provided by Hell and Picard does not suggest that the position of the pinhole or the beam-splitter can be altered and the detection pinhole is embodied as at least one chromatically selective component. However, it is known to one skilled in the art to move the pinhole for the purpose of obtaining a better quality of the image and the use of a multiband detector having multiple detecting elements for selectively sensing a particular wavelengths as can be seen in the device provided by Stern et al. See columns 2-3 and 7-10. It is also noted that the use of pinhole as an embodiment having chromatically selective component is an obvious matter to one skilled in the art. Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the system provided by Hell and Picard by moving the pinhole for receiving the image with better quality and use a multiband detecting system with sensing elements for selectively receiving particular wavelength as suggested by Stern et al for the purpose of guiding different wavelengths for different purposes.

Response to Arguments

10. Applicant's arguments filed 5/29/2003 have been fully considered but they are not persuasive.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208

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USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the device provided by Picard is directed to a scanning microscope which is in the same field of endeavor as that disclosed by either Hell or Schoppe. Picard is used to support for the feature that a laser is a light source can provide a light of many wavelengths. The feature relating to the use of two objectives disposed on opposite sides of a specimen is clearly disclosed in each of the primary references, i.e., the art of Hell or the art of Schoppe.

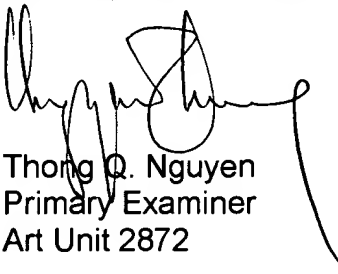
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Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thong Q. Nguyen whose telephone number is (703) 308-4814. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A Dunn can be reached on (703) 305-0024. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0956.



Thong Q. Nguyen
Primary Examiner
Art Unit 2872

July 22, 2003